State Intellectual Property Office of People's Republic of China

Add: 25/F., Bldg.B, Tsinghua Tongfang Hi-Tech Plaza, No.1, Wangzhuang Rd.,
Haidian District, Beijing , P. R. China, Postal Code:100083

Applicant	**MAX CO., LTD.**	Issuing Date: **September 14, 2007**
Patent Agent	**Jian LIU**	
Application No.	**200480026059.2**	
Title of Invention	**Stapler**	

FIRST OFFICE ACTION

(For PCT Application Entering the National Phase)

1.☒ The applicant has filed a request for substantive examination on _____(day/month/year). The examiner has carried out substantive examination on the above mentioned patent application for invention in accordance with the provisions of Article 35(1) of the Chinese Patent Law.

☐ The Patent Office has decided to carry out a substantive examination on the above mentioned patent application for invention in accordance with the provisions of Article 35(2) of the Chinese Patent Law.

2.☒ The applicant claimed:

The filing date **2003.9.10** in the Japan Patent Office as the priority date,

The filing date _____ in the _____ Patent Office as the priority date, and

The filing date _____ in the _____ Patent Office as the priority date.

3.☐The following amended document(s) submitted by the applicant is (are) unacceptable, as the document(s) is(are) not in conformity with the provisions of Article 33 of the Chinese Patent Law:

☐The Chinese translation of the annexes of the International Preliminary Examination Report,

☐The Chinese translation of the amendment submitted under Article 19 of the Patent Cooperation Treaty,

☐The Chinese translation of the amendment submitted under Article 28 or 41 of the Patent Cooperation Treaty,

☐The amendment submitted in accordance with Rule 51 of the Implementing Regulations of the Chinese Patent Law.

The detailed reasons for the amendments being unacceptable is described in the text of this office action.

4.☒The examination was carried out based on the Chinese translation of the international application as originally filed.

☐ The examination was carried out on the basis of the following application documents:

☐ The description

Pages _____, the Chinese translation of the international application as originally filed;

Pages _____, the Chinese translation of the annexes of the International Preliminary Examination Report;

Pages _____, the Chinese translation of the amendment submitted under Article 28 or 41 of the Patent Cooperation Treaty;

Pages _____, amendment submitted according to Rule 51 of the Implementing Regulations of the Chinese Patent Law.

☐ The claims

Nos._____, the Chinese translation of the international application as originally filed;

Nos._____, the Chinese translation of the amendment submitted under Article 19 of the Patent Cooperation Treaty.

Nos._____,the Chinese translation of the annexes of the International Preliminary Examination Report;

Nos._____, the Chinese translation of the amendment submitted under Article 28 or 41 of the Patent Cooperation Treaty;

Nos._____, amendment submitted according to Rule 51 of the Implementing Regulations of the Chinese Patent Law.

☐ The drawings

Pages_____, the Chinese translation of the international application as originally filed;

Pages_____,the Chinese translation of the annexes of the International Preliminary Examination Report;

Pages _____, the Chinese translation of the amendment submitted under Article 28 or 41 of the Patent Cooperation Treaty;

Pages_____, amendment submitted according to Rule 51 of the Implementing Regulations of the Chinese Patent Law.

5.☒ The following reference documents have been cited in this office action(their serial numbers will be referred to in the ensuing examination procedure):

Serial No.	Reference document(Number or Title)	Publication Date (or Filing date of interference patent applications)
1	**US4573625A**	**4** day **3** month **1986** year
2	**GB525649A**	**2** day **9** month **1940** year
3		
4		

6. The result of the examination is as follows:

☐ Description:

☐ The subject matter of the application falls into the scope on which no patent right shall be granted as provided by Article 5 of the Chinese Patent Law.

☐ The description is not in conformity with the provisions of Article 26(3) of the Chinese Patent Law.

☐ The description is not in conformity with the provisions of Rule18 or 19 of the Implementing Regulations of the Chinese Patent Law.

☒ Claims:

☐ Claim _____ falls into the scope within which no patent right shall be granted as provided by Article 25 of the Chinese Patent Law

☐ Claim _____does not possess novelty as provided by Article 22(2) of the Chinese Patent Law.

☒ Claims 1-7 do not possess inventiveness as provided by Article 22(3) of the Chinese Patent Law.

☐ Claim _____does not possess practical applicability as provided by Article 22(4) of the Chinese Patent Law.

☐ Claim _____is not in conformity with the provisions of Article 26(4) of the Chinese Patent Law.

☐ Claim _____is not in conformity with the provisions of Article 31(1) of the Chinese Patent Law.

☐ Claim _____is not in conformity with the provisions of Rule 20 of the Implementing Regulations of the Chinese Patent Law.

☐ Claim _____is not in conformity with the provisions of Rule 21 of the Implementing Regulations of the Chinese Patent Law.

☐ Claim _____is not in conformity with the provisions of Rule 23 of the Implementing Regulations of the Chinese Patent Law.

☐ Claim _____ is not in conformity with the provisions of Article 9 of the Chinese Patent Law.

☐ Claim _____is not in conformity with the provisions of Rule 12(1) of the Implementing Regulations of the Chinese Patent Law.

☐

The detail analysis for above conclusive opinion is described in the text of this office action.

7. On the basis of the above conclusive opinion, the examiner holds that:

☐The applicant should make amendments as required in the text of this office action.

☐The applicant should provide reasons for that the above mentioned patent application can be granted the patent right, and make amendments to the specification which is not in conformity with the provisions as described in text of this office action; otherwise the patent right shall not be granted.

☒The patent application does not possess any substantive patentable contents, if the applicant fails to provide reasons or the reasons provided are not sufficient, this application will be rejected.

☐

8. The applicant's attention is drawn to the following matters:

(1) In accordance with the provisions of Article 37 of the Chinese Patent Law, the applicant shall submit a response within **four** months from the receipt of this office action. If the applicant fails to meet the time limit without any justified reason, the application shall be deemed to be withdrawn.

(2) The amendment made by the applicant shall be in conformity with the provisions of Article 33 of the Chinese Patent Law. The amended documents shall be submitted in duplicate and in the format required by the relevant provisions of the Examination Guideline.

(3) The applicant's response and/or amended documents shall be mailed or submitted to the Receiving Department of the Chinese Patent Office. Documents which are not mailed or submitted to the Receiving Department do not possess legal effect.

(4) The applicant and/or his (its) agent shall not come to the Chinese Patent Office for interview with the examiner without an appointment.

9. The text of this office action consists of a total of 3 sheet(s), and is accompanied by the following annexes:

☐ A copy of cited reference documents consisting of 2 set(s) and 25 sheet(s).

☐

The _____ Examination Department

The Seal of the Examiner: **Bo GAO**

中华人民共和国国家知识产权局

100083 北京市海淀区王庄路1号清华同方科技大厦B座25层 中科专利商标代理有限责任公司 刘建	发文日
申请号:2004800260592	
申请人:美克司公司	
发明名称:订书机	

专利局 2007.09.14 00 发文

第一次审查意见通知书

(进入国家阶段的PCT申请)

1. ☑应申请人提出的实审请求,根据专利法第35条第1款的规定,国家知识产权局对上述发明专利申请进行实质审查。
   ☐根据专利法第35条第2款的规定,国家知识产权局专利局决定自行对上述发明专利申请进行审查。
2. ☑申请人要求以其在:
   JP 专利局的申请日 2003年09月10日为优先权日,
   专利局的申请日 年 月 日为优先权日,
   专利局的申请日 年 月 日为优先权日。
3. ☐申请人于 年 月 日和 年 月 日以及 年 月 日提交了修改文件。
   经审查,申请人于 年 月 日提交的 不符合专利法实施细则第51条第1款的规定。
   ☐_____
4. ☑审查是针对原始提交的国际申请的中文译文进行的。
   ☐审查是针对下述申请文件进行的:
   ☐说明书 第_____页,按照进入中国国家阶段时提交的国际申请文件的中文文本;
   第_____页,按照专利性国际初步报告附件的中文文本;
   第_____页,按照依据专利合作条约第28条或41条规定所提交的修改文件;
   第_____页,按照依据专利法实施细则第51条第1款规定所提交的修改文件;
   第 页,按照 年 月 日所提交的修改文件。
   ☐_____
   ☐权利要求 第_____项,按照进入中国国家阶段时提交的国际申请文件的中文文本;
   第_____项,按照依据专利合作条约第19条规定所提交的修改文件的中文文本;
   第_____项,按照专利性国际初步报告附件的中文文本;
   第_____项,按照依据专利合作条约第28条或41条规定所提交的修改文件;
   第_____项,按照依据专利法实施细则第51条第1款规定所提交的修改文件;
   第 项,按照 年 月 日所提交的修改文件。
   ☐_____
   ☐附图 第_____页,按照进入中国国家阶段时提交的国际申请文件的中文文本;
   第_____页,按照专利性国际初步报告附件的中文文本;
   第_____页,按照依据专利合作条约第28条或41条规定所提交的修改文件;
   第_____页,按照依据专利法实施细则第51条第1款规定所提交的修改文件;
   第 页,按照 年 月 日所提交的修改文件。

回函请寄:100088 北京市海淀区蓟门桥西土城路6号 国家知识产权局专利局受理处收
(注:凡寄给审查员个人的信函不具有法律效力)

☐_____

☑本通知书引用下述对比文件(其编号在今后的审查过程中继续沿用):

编号	文件号或名称	公开日期（或抵触申请的申请日）
1	US4573625A	1986-03-04
2	GB525649A	1940-09-02

5. 审查的结论性意见:

☐关于说明书:

☐申请的内容属于专利法第 5 条规定的不授予专利权的范围。

☐说明书不符合专利法第 26 条第 3 款的规定。

☐说明书不符合专利法第 33 条的规定。

☐说明书的撰写不符合专利法实施细则第 18 条的规定。

☐_____

☑关于权利要求书:

☐权利要求_____不具备专利法第 22 条第 2 款规定的新颖性。

☑权利要求 1-7 不具备专利法第 22 条第 3 款规定的创造性。

☐权利要求_____不具备专利法第 22 条第 4 款规定的实用性。

☐权利要求_____属于专利法第 25 条规定的不授予专利权的范围。

☐权利要求_____不符合专利法第 26 条第 4 款的规定。

☐权利要求_____不符合专利法第 31 条第 1 款的规定。

☐权利要求_____不符合专利法第 33 条的规定。

☐权利要求_____不符合专利法实施细则第 2 条第 1 款的规定。

☐权利要求_____不符合专利法实施细则第 13 条第 1 款的规定。

☐权利要求_____不符合专利法实施细则第 20 条的规定。

☐权利要求_____不符合专利法实施细则第 21 条的规定。

☐权利要求_____不符合专利法实施细则第 22 条的规定。

☐权利要求_____不符合专利法实施细则第 23 条的规定。

☐_____

☐分案的申请不符合专利法实施细则第 43 条第 1 款的规定。

上述结论性意见的具体分析见本通知书的正文部分。

6. 基于上述结论性意见,审查员认为:

☐申请人应按照通知书正文部分提出的要求,对申请文件进行修改。

☐申请人应在意见陈述书中论述其专利申请可以被授予专利权的理由,并对通知书正文部分中指出的不符合规定之处进行修改,否则将不能授予专利权。

☑专利申请中没有可以被授予专利权的实质性内容，如果申请人没有陈述理由或者陈述理由不充分，其申请将被驳回。

☐_____

7. 申请人应注意下述事项:

(1)根据专利法第 37 条的规定,申请人应在收到本通知书之日起的肆个月内陈述意见,如果申请人无正当理由逾期不答复,其申请将被视为撤回。

(2)申请人对其申请的修改应符合专利法第 33 条的规定,修改文本应一式两份,其格式应符合审查指南的有关规定。

(3)申请人的意见陈述书和/或修改文本应邮寄或递交国家知识产权局专利局受理处,凡未邮寄或递交给受理处的文件不具备法律效力。

(4)未经预约,申请人和/或代理人不得前来国家知识产权局专利局与审查员举行会晤。

8. 本通知书正文部分共有 3 页,并附有下述附件:

☑引用的对比文件的复印件共 2 份 25 页。

☐_____

审查员:高波(9216)

2007 年 8 月 28 日

审查部门 审查协作中心

回函请寄:100088 北京市海淀区蓟门桥西土城路 6 号 国家知识产权局专利局受理处收

(注:凡寄给审查员个人的信函不具有法律效力)

第一次审查意见通知书正文

申请号：2004800260592

该申请涉及一种订书机。经审查，具体意见如下：

1.独立权利要求1请求保护一种订书机，而对比文件1（US4573625A）同样公开了一种订书机，并具体公开了如下技术特征（参见其说明书第3栏第37行-第13栏第15行，附图1-24）：该订书机包括一装填多个笔直状并排连结的订书钉94的钉盒90，钉盒90被放置于装钉箱32中，钉盒90的前部引导部件102形成了打出部，其前端与直立部分挡板34间的间隙形成了订书机的打入通路，可动基座60可以进出打入通路内，钉盒90内的订书钉94通过导入部96（相当于订书机供给机构）向所述打入通路供给订书钉，成形板70能将打入通路内可动基座上的订书钉成形为U形，驱动板80能在打入通路内滑动，并将订书钉从打入通路打出；

权利要求1与对比文件1的区别在于：权利要求1中的成形板可将进入打入通路内的订书钉和与此订书钉相接的订书钉同时成形为U形。基于上述区别特征可以确定，权利要求1相对于对比文件1实际所要解决的技术问题是防止打入通路内的订书钉出现翻转现象；

但是，对比文件2（GB525649A）公开了一种订书钉的成形和驱动机构(参见说明书第2页第108行-130行，附图5和6)，这种机构的弯曲压件15（相当于成形板）的厚度是驱动压件17（相当于驱动板）的三倍，可以将打入通路上的订书钉及与其相连的两根订书钉同时压成U形，以防止成形后的订书钉的弯折部份翻转到倾斜位置。由此可见，上述区别技术特征已被对比文件2公开，并且这些技术特征在对比文件2中所起的作用相同。因此，该领域的技术人员可以从对比文件2中得到启示，将上述特征应用于对比文件1的订书机中，从而得到权利要求1要求保护的技术方案，也就是说对比文件1和2的这种结合对该领域的技术人员来说是显而易见的，不具有突出的实质性特点和显著的进步，因此权利要求1不具备专利法第二十二条第三款规定的创造性。

2.从属权利要求2对其引用的权利要求1作了进一步的限定，附加技术特征是“所述驱动板和所述成形板在同一平面上工作”，附加技术特征所要解决的技术问题是使得订书钉的成形和打出在同一平面上，对比文件1（参见附图2和24）公开了如下技术特征：成形板70的一侧与驱动板80的一侧重合，两者可沿重合面作上下运动。因此从属权利要求2的附加技术特征已被对比文件1公开，当其引用的权利要求1不具备创造性时，其从属权利要求2也不具备专利法第二十二条第三款规定的创造性。

3.从属权利要求3对其引用的权利要求1作了进一步的限定，附加技术特征为“所述成形板的厚度大致为2根订书钉断面宽度的尺寸的板材形成，所述驱动板由厚度与订书钉断面尺寸相同的板材形成”。其作用是保证驱动板可以一次打出一根订书钉，成形板可以一次成形两根订书钉。对比文件2公开了如下技术特征：驱动压件17（相当于驱动板）比订书钉略薄（参见说明书第2页第64行-第66行），弯曲压件15（相当

于成形板）的厚度是驱动压件17的三倍（参见说明书第2页第第116行-第117行），即驱动压件17的厚度大致为订书钉的厚度，弯曲压件15的厚度大致为三倍订书钉的厚度。从属权利要求2的附加技术特征与对比文件2公开的技术特征的区别在于，两个成形板的厚度不同。本领域普通技术人员在设计成形板厚度时，根据其掌握的该领域技术常识和所要达到的技术要求，很容易想到将对比文件2公开的成形板厚度改变为本权利要求所述的两个订书钉的厚度，而采取上述技术手段也是目前订书机成形板设计时常采用的手段。因此，将对比文件2所给出的上述技术特征和本领域技术常识与对比文件1相结合，从而得到权利要求3的所要保护的技术方案，这对于本领域的技术人员来说是显而易见的。当其引用的权利要求1不具备创造性时，从属权利要求3也不具备专利法第二十二条第三款规定的创造性。

4. 从属权利要求4对其引用的权利要求1作了进一步的限定，附加技术特征为“所述打出部形成于所述钉盒上”。对比文件1（参见附图1-4）也公开了如下技术特征：在钉盒90的前端的引导部件102形成了打出部。因此从属权利要求4的附加技术特征已被对比文件1全部公开，当其引用的权利要求1不具备创造性时，其从属权利要求4也不具备专利法第二十二条第三款规定的创造性。

5. 从属权利要求5对其引用的权利要求1作了进一步的限定，附加技术特征为“所述成形板可以将进入所述打入通路内的可动基座上配置的订书钉和与该订书钉相连续的多个订书钉同时成形为U形”。对比文件1（参见同上）已经公开了如下技术特征：成形板70能将打入通路内可动基座上的订书钉成形为U形。对比文件2（参见同上）公开了如下技术特征：弯曲压件15（相当于成形板）的厚度是驱动压件17（相当于驱动板）的三倍，可以将打入通路上的订书钉及与其相连的两根订书钉同时压成U形。对比文件2公开的上述技术特征与从属权利要求5的附加技术特征所起的作用相同，即防止成形后的订书钉的弯折部份翻转到倾斜位置。因此，当其引用的权利要求1不具备创造性时，权利要求5也不具备专利法第二十二条第三款规定的创造性。

6. 从属权利要求6对其引用的权利要求1作了进一步限定，附加技术特征为：“有将订书钉导向到所述打出部的订书钉导向部件和形成于所述导向部件前端的固定基座”，对比文件1（参见附图1-4）公开了如下技术特征：在钉盒90的前端的引导部件102将订书钉94引导到其前部的固定基座100上。因此从属权利要求6的附加技术特征已被对比文件1全部公开，当其引用的权利要求1不具备创造性时，其从属权利要求6也不具备专利法第二十二条第三款规定的创造性。

7. 从属权利要求7对其引用的权利要求6作了进一步的限定，附加技术特征为“所述成形板可以将进入所述打入通路内的可动基座上配置的订书钉和固定基座上配置的订书钉同时成形为U形”。对比文件1（参见同上）已经公开了如下技术特征：成形板70能将打入通路内可动基座上的订书钉成形为U形。对比文件2（参见同上）公开了如下技术特征：弯曲压件15（相当于成形板）的厚度是驱动压件17（相当于驱动板）

的三倍，可以将打入通路上的订书钉及与其相连的两根订书钉同时压成U形。对比文件2公开的上述技术特征与从属权利要求7的附加技术特征所起的作用相同，即防止成形后的订书钉的弯折部份翻转到倾斜位置。由此可见，本领域的普通技术人员，在设计订书机的成形板时，根据其所掌握的本领域基本常识及所要达到的技术要求，将对比文件2公开的技术特征应用于对比文件1所述的订书机上，增厚成形板，一次即可成形多个订书钉，最前端的成形的订书钉必然在可动基座内，其它同时成形的订书钉在固定基座上，即可得到如权利要求7所述的技术方案。因此，该领域的技术人员可以从对比文件2中得到启示，将上述特征应用于如对比文件1所述的订书机中，从而得到权利要求7要求保护的技术方案，也就是说对比文件1和2的这种结合对该领域的技术人员来说是显而易见的，不具有突出的实质性特点和显著的进步，因此当其引用的权利要求6不具备创造性时，从属权利要求7也不具备专利法第二十二条第三款规定的创造性。

基于上述理由，该申请的全部权利要求都不具备创造性，同时说明书中也没有记载其它任何可以授予专利权的实质性内容，因而即使申请人对权利要求进行重新组合和/或根据说明书记载的内容作进一步的限定，该申请也不具备被授予专利权的前景，除非申请人能够在本通知书指定的四个月答复期限内提出表明该申请具有创造性的充分理由，否则该申请将被驳回。

审查员：高波

代码：92I6

PATENT SPECIFICATION

Convention Date (Netherlands): Feb. 28, 1938. **525,649**

Application Date (In United Kingdom): Feb. 24, 1939. No. 6203/39.

Complete Specification Accepted: Sept. 2, 1940.

COMPLETE SPECIFICATION

Improvements in or relating to Apparatus for Bending and Driving in Staples

I, REURT CORNELIUS HAZEWINKEL, of Zuilen-Utrecht, Holland, of Dutch nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a stapling machine of the kind in which the staples are furnished to the machine in the form of a flat strip, capable of being stored in the machine in the form of a roll, and in which the working stroke of the machine, besides severing a staple from the strip and driving a staple into the work, also bends the prongs of a succeeding staple or staples into U-form ready for driving, the staple strip being fed forward during the return stroke of the bending and driving stamps by a spring-controlled feed pawl, which is retracted by the bending stamp during the working stroke.

In a known stapling machine of this type the bending stamp is held in fixed relationship with a detaching stamp and with a driving or inserting stamp, each staple being bent, detached and inserted in three successive strokes. According to the present invention, however, while a bending stamp is positively impelled forward by the working stroke of an actuating handle, a hammer for actuating a severing and driving stamp is held back by a detent during the earlier part of the working stroke, energy being thereby stored by the compression of an impulsion spring, interposed between the hammer and the actuating handle, and this detent is retracted towards the end of the working stroke by the further advance of the actuating handle, thereby releasing the hammer, which then impels forward the severing and driving stamp by means of the energy stored in its impulsion spring, which is additional to the continuing forward thrust applied to the actuating handle, and this stamp severs and drives into the work, in one stroke, a staple which was acted upon by the bending stamp during the preceding working stroke.

A stapling machine has already been proposed in which the driving of the staples is effected by means of a driving stamp which is itself retained and released by a detent under the control of an actuating handle and is propelled by energy accumulated during the earlier part of the working stroke in a compression spring, but in this known machine there is no bending stamp, since the staples are supplied to the machine already bent to U-form.

The invention is illustrated by way of example in the accompanying drawings, in which

Fig. 1 shows the apparatus as a whole in sectional elevation on the line B—B¹ in Figure 3;

Fig. 2 is a side view of the apparatus with the hood removed.

Fig. 3 is a bottom or inverted plan view of the apparatus;

Fig. 4 is a view of the hood;

In Fig. 5 the lower extremities of the bending and driving stamps are represented; and

Fig. 6 is a section of the lower part of the apparatus on the line A—A¹ in Figure 3.

The apparatus mainly consists of parts for the storage, the guiding and the feeding of the staples, which are conveyed in the form of a flexible band, and of parts for actuating and controlling the bending and driving mechanisms.

A case 1 serves as a container for the staples, which are connected with one another by their middle and form a flat band, which can be rolled up lengthwise. At the side of the container the case 1 comprises a tubular part 2 for guiding the actuating and driving mechanisms.

Against the case 1 a hood 3 is screwed, which is provided with guides for the bending and driving mechanisms. Furthermore two pivots 4 and 6 are fixed in the case 1. Upon the pivot 4 a pawl or detent 5 is oscillatably mounted, by which a hammer 12 forming part of the driving mechanism is periodically held fast. On the pivot 6 is mounted a pawl 7 serving for the feeding of the staple band. The pawls 5 and 7 are subject to the influence of springs 8 and 9 respec-

tively, and are pressed back against the action of these springs during the stroke of the bending mechanism.

The actuating device consists of a cylinder 10 and a handle 11. In the cylinder 10 are enclosed the hammer 12 and a spring 13 for impelling the hammer. Around the cylinder is arranged a spring 14 for returning the parts to their initial position after the working stroke.

The bending mechanism itself consists of a stamp 15, which is provided with a forked extremity and is secured to a semi-circular block 16 by a bolt 22. The driving mechanism comprises a stamp 17, constituting a unit with a semi-circular block 18, on which the hammer 12 strikes when the spring 13 is released by the detent 5.

A plate 19 and a strip 20 guide the staple band.

The free extremities of the hood 3 and of a strip or ledge 21 form legs on which the apparatus rests, when placed against a packing case into which a staple is to be driven.

The apparatus works as follows: If the handle 11 is pressed down, the bending stamp 15, which is secured not only to the semi-circular block 16 but also to the cylinder 10 by the bolt 22, follows the movement. The semi-circular block 18 overlaps the bending stamp 15 or the block 16 in such a way that the part 18, though taken along in the upward direction by the part 16, is only coupled thereto by friction during the downward motion of part 16. After a certain travel of the bending stamp, the detent 5, which has previously locked the hammer 12, is pushed back by the edge 23 of the cylinder 10, thus releasing the hammer. During this earlier part of the stroke the impulsion spring 13 has been compressed. After the detent 5 has released the hammer the spring 13 drives the latter forward, as a result of which the driving stamp 17 receives a heavy blow from the hammer 12. When the handle 11 is released the stamps 15 and 17 are both returned to the starting position by the spring 14, after which the detent 5 again locks the hammer 12. The detent 5 passes through a slot 24, which is provided in the cylinder 10, the case 2 and a lining 25 between them.

During these movements the bending stamp 15 and the driving stamp 17 are guided into the hood 3. In the hood a filling plate 26, two strips 27, a U-shaped bent strip 28, and a jointing piece 29 are provided. The hood, with the above-mentioned parts, is fastened by bolts 30 to the case 1, for which purpose bolt holes 31 are provided. The driving stamp 17 fits exactly between the strips 27, and is a little thinner than these strips. When the driving stamp is at the end of its travel, it projects through an opening 32, which is formed between the filling plate 26, the U-shaped bent strip 28, and the edges of the strips 27. Through this opening the previously bent staple is expelled. The bending stamp 15 fits exactly between the legs of the U-shaped strip 28. This stamp has a forked extremity, the form of which corresponds to that of the U-shaped strip. The bending of the staple is effected by the forked extremity of the stamp 15, which bends the staple round a nose on the part 28, behind the jointing piece 29.

Before the staple, thus bent, can be driven home by the stamp 17, the staple must first be advanced in a horizontal direction, so that it comes to lie above the opening 32. This forward feeding of the staples is effected by means of the pawl 7, which is deflected against the action of the spring 9 when the bending stamp 15 presses against the nose 33 of this pawl 7. During the return stroke, however, as soon as the forked end of the ascending stamp 15 releases the nose 33, the feed pawl is moved towards the hood by the spring 9. The feed pawl 7 is provided with two arms the extremities 34 of which just press against the bent staple when springing back. In consequence the latter is advanced in a horizontal direction so that it is pushed into the opening 32. Since the bent staple is still fixed to the other remaining staples, a fresh staple is thus brought underneath the bending stamp. At the next working stroke the staple located in the opening 32 is severed from the strip and driven into the work by the driving stamp 17.

It is not necessary that in each working movement, that is, by pushing the handle 11 down once, a single staple should be bent and the one immediately annexed thereto hammered home, but between these a certain difference may exist, dependent on the difference in thickness of the two stamps. In the constructional example of Fig. 6 the bending stamp is three times as thick as the driving stamp. By this the advantage is obtained that each staple is bent three times by the stamp 15 before this staple reaches the opening 32, thus preventing the limbs of the bent staples from springing back into a slanting position, which would hamper the feeding and driving operations. In Fig. 6 is represented the moment at which the nose 33 of the pawl 7, during the upward movement of the stamps, is still just held by the stamp 15. In this figure the three bent staples are indicated by 35, and the staple band by 36.

In the container 37 (Fig. 1) a ribbon of about 5000 staples can be stored. This space is closed by a cover, the latter being fixed with a nut 38. The case 1 is provided with turned-up ridges 39, upon which the plate 19 is fixed. This plate is connected to the case with screws 40, and is provided with slots or incisions 41, through which the feed pawl 7 can move. The plate 19 is also provided with a couple of bent-down ridges 42, the strip of staples 36 being guided between these ridges, the plate 19 and the strip 20, which latter is screwed into the case 1.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A stapling machine in which the staples are furnished to the machine in the form of a flat strip, capable of being stored in the machine in the form of a roll, and in which the working stroke of the machine, besides severing a staple from the strip and driving a staple into the work, also bends the prongs of a succeeding staple or staples into U-form ready for driving, the staple strip being fed forward during the return stroke of the bending and driving stamps by a spring-controlled feed pawl, which is retracted by the bending stamp during the working stroke, characterised by the feature that while the bending stamp is positively impelled forward by the working stroke of an actuating handle a hammer for imparting an impulse to a severing and driving stamp is held back by a detent during the earlier part of the working stroke, energy being thereby stored by the compression of an impulsive spring interposed between the hammer and the actuating handle, this detent being retracted towards the end of the working stroke, while the bending stamp is still being advanced by the actuating handle, thereby releasing the hammer, which then imparts an impulse to the severing and driving stamp by means of the energy stored in the spring, and under the influence of this impulse, which is additional to the continuing forward thrust applied to the actuating handle, this stamp severs and drives into the work in one stroke, a staple bent by the bending stamp during the preceding working stroke.

2. A stapling machine as claimed in claim 1, characterised by the feature that while the hammer is retained by the detent the severing and driving stamp can advance some distance towards the work by frictional contact with the bending stamp.

3. A stapling machine as claimed in claim 2, characterised by the feature that a projection at the upper end of the severing and driving stamp engages over the top of the bending stamp, so that the bending stamp, when retracted by the actuating handle, takes the severing and driving stamp with it.

4. A stapling machine as claimed in claim 1, 2 or 3, characterised by the feature that semicircular blocks secured to the upper ends of the severing and driving stamp and of the bending stamp together form a cylindrical member, which fits into a hollow cylinder secured to the actuating member and enclosing the hammer and its impulsion spring.

5. A stapling machine as claimed in any one of the preceding claims, characterised by the feature that the bending stamp is of greater thickness than the driving stamp or than a single staple, so that the staples are bent more than once before being hammered home.

6. Apparatus for bending and driving in staples, substantially as hereinbefore described with reference to the accompanying drawings.

Dated this 24th day of February, 1939.
MARKS & CLERK.

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1940.

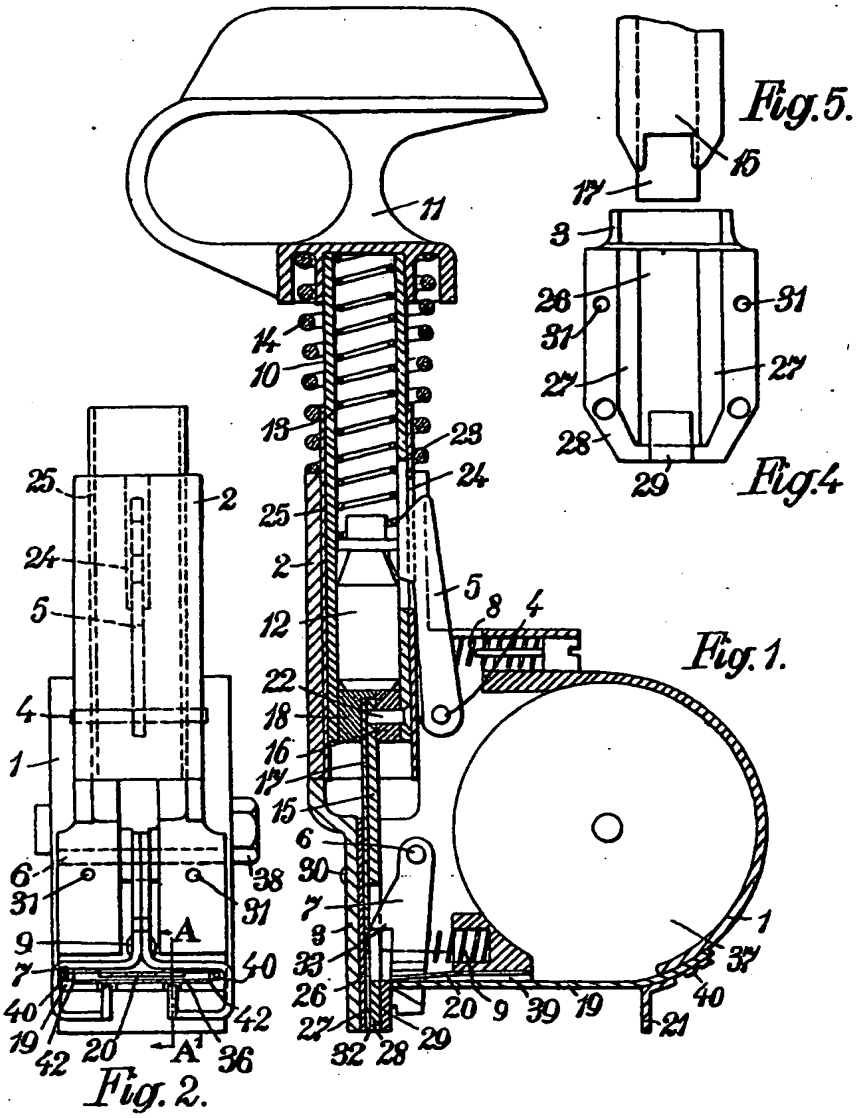

Fig. 1.

Fig. 4.

Fig. 5.

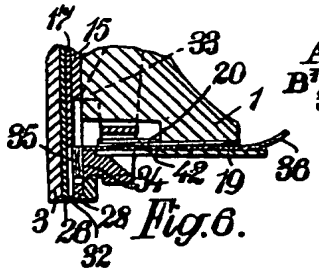

Fig. 6.

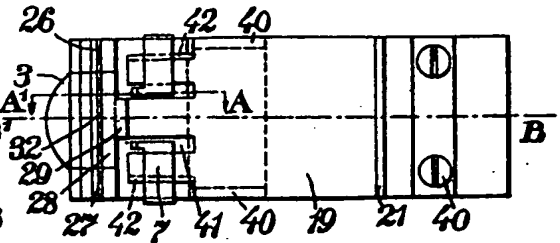

Fig. 3.

Malby & Sons, Photo-Litho.